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10/775,668

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Robert Mack

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EXAMINER

TAYONG, HELENE E

ART UNIT

PAPER NUMBER

2611

MAIL DATE

DELIVERY MODE

06/11/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/775,668

Applicant(s)

MACK ET AL.

Examiner

Helene Tayong

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 February 2004.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-20 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 2/9/04 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

1. Acknowledgement of the amendment received on: 4/9/07
2. Applicant's arguments with respect to claim 1, 9 and 16 have been considered but are moot in view of the new ground(s) of rejection.

Response to Arguments

Applicant's Argument-" Van Driest does not encode addition data according to an amount of delay between on-overlapping spread spectrum codes. Van Driest uses code position modulation to encode additional data by varying the amount of overlapping between portions of consecutive Barker sequences (col. 6, lines 1-4). One problem with Barker is that interference will be created between the overlapping transmitted codes. Thus, the code transmissions may be less reliable. Conversely, claim 1 of the present application encodes additional data not by overlapping code sequences but by inserting different amounts of non-overlapping time delay between adjacent non-overlapping spread spectrum codes. Accordingly, claim 1 is allowable under 35 U.S.C. § 102(b) over Van Driest. Claims 9 and 16 have been amended in a similar manner and are therefore allowable".

Examiner's response-in response to applicant's argument that Van Driest does not encode addition data according to an amount of delay between on-overlapping spread spectrum codes, in (col. 6, lines 56-62), a variable rate symbol generator is discussed which add additional bits that are transmitted per one microsecond time frame, for an 8 MHZ data transfer rate.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claim s 1 and 16 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 1 recites the limitations of "*wherein the other data values correspond to an amount of clock periods inserted by the slip encoder between the generation of adjacent **non-overlapping** spread spectrum codes*" in lines 5-7. The limitation **non-overlapping** was not described in the specification of the present application. Applicant is welcomed to point out where in the specification the examiner can find support for the above-mentioned limitations if applicant believes that the specification supports the limitations.

Claim 16, line 5 and 6, the phrase "**non-overlapping**" is not disclosed in the specifications. Applicant is welcomed to point out where in the specification the examiner can find support for the above-mentioned limitations if applicant believes that the specification supports the limitations.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. **Claim 13** is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 13 recites the limitation **the match counter** in lines 8. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-3,6-9,13,14 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Raphaeli (US 2004/0202229 A1).

(1) with regards to claim 1;

a spread spectrum encoder (fig. 1, 14) configured to encode data values with one or more spread spectrum codes and generate a corresponding spread spectrum encoded data stream (pg. 3, [0033]); and

a slip encoder configured to encode other data values into the encoded data stream by varying time spacing between the spread spectrum codes (fig1, 14, pg. 3, [0033]), wherein the other data values correspond to an amount of clock periods

inserted by the slip encoder between the generation of adjacent non-overlapping spread spectrum codes (pg. 4, [0041], lines 2-5).

(2) with regards to claim 2;

a spread spectrum encoder (fig. 1, 14) configured to encode data values with one or more spread spectrum codes and generate a corresponding spread spectrum encoded data stream (pg. 3, [0033]); and

a slip encoder configured to encode other data values into the encoded data stream by varying time spacing between the spread spectrum codes (fig1, 14, pg. 3, [0033]),

the slip encoder includes a slip counter (fig. 1, 38) that delays the code counter from outputting the chips for adjacent spread spectrum codes according to associated data values. (pg.5, [0056])

(3) with regards to claim 3;

the slip encoder inserts a slip pattern between adjacent spread spectrum codes while being delayed by the slip counter (pg, 4, [0047]).

(4) with regards to claim 6;

wherein the slip encoder includes a slip counter that delays the code counter from outputting the chips for adjacent spread spectrum codes according to associated data values . (pg.5, [0056])

(5) with regards to claim 7;

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a data inverter converting a sequence of bits representing selected data values into lesser inverted data values, the slip encoder varying the spacing between some spread spectrum codes according to the inverted data values(fig. 2, 40).

(6) with regards to claim 8;

a header (fig. 3, 74) in the encoded data stream identifies the inverted data value (pg.2, [0025].

(7) with regards to claim 9;

a spread spectrum decoder configured to decode data from a spread spectrum encoded data stream (fig. 2, 52); and

a slip decoder (fig. 2, 52) configured to decode additional data associated with different time gaps between codes in the spread spectrum encoded data stream (pg. 6, [0060]);

wherein the other data values corresponding to an amount of non-overlapping time delay detected between adjacent non-overlapping spread spectrum codes data stream (fig. 4, pg. 6, [0061].

(8) With regards to claim 13;

the slip decoder (fig. 2, 52) includes a slip counter that identifies an amount of time between the data values identified by the match counter (pg. 6, [0064]).

(9) With regards to claim 14;

The slip counter subtracts a transmit time value associated with transmitting the spread spectrum codes from the identified time between data values (pg.6, [0066].

(10) with regards to claim 16;

encoding a first set of data values into an encoded data stream using spread spectrum Pseudo Noise (PN) codes (pg. 3, [0033]);

and encoding a second set of data values into the encoded data stream by varying rates that the PN codes are output in the encoded data stream (fig. 1, 14, pg. 3, [0033] by varying an amount of non-overlapping time delay inserted between the generation of sequentially generated non-overlapping PN codes out in the encoded data stream (pg. 4, [0041], lines 2-5.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1, 10, 15,17,18,19,20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Van Driest (US 6115411).

(1) with regards to claim 1

Van Driest discloses a spread spectrum encoder (fig.2, 204) configured to encode data values with one or more spread spectrum codes and generate a corresponding spread spectrum encoded data stream (col. 3, lines 14-21); and

Van Driest does not teach specifically teach a slip encoder configured to encode other data values into the encoded data stream by varying time spacing between the spread spectrum codes, wherein the other data values corresponding to an

amount of clock periods inserted by the slip encoder between the generation of adjacent non-overlapping spread spectrum codes.

However, Van Driest, disclose a variable rate symbol generator (slip encoder, fig. 2, 202) wherein, there is an extension of information bits per symbol as Barker codes (interpreted as other data) and theses codes are transmitted per one microsecond time(interpreted as gap) frame (Col. 6, lines 56-62). Adding an extension of sequences of codes by Van Driest and filling or inserting of gaps between PN sequences by this application have the same functions.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the method of Van Driest in order to improve data transfer rate.

(2) with regards to claim 10;

Van Driest further discloses a number of time units associated with the time gaps corresponds with different data values (one microsecond time, col. 6, lines 62-63)

(3) with regards to claim 15;

Van Driest discloses a data inverter identifying inverted data values output from the slip decode and inverting bits for the identified inverted data values (col.9, lines 35-39) .

(4) with regards to claim 17;

Van Driest discloses delaying encoding between each of the first set values into the encoded data stream for inserting a number of time increments between adjacent PN codes corresponding to the second set of data values (col.7, lines 6-10)

(5) with regards to claim 18;

Van Driest discloses transmitting and receiving the encoded data stream using a wireless Universal Serial Bus (USB) device (IEEE 802.11 standard, col. 5, lines 29-31).

(6) with regards to claim 19;

Van Driest discloses extracting the first set of data from the encoded data stream by identifying the PN codes in the encoded data stream and extracting the second set of data from the encoded data stream by identifying an amount of time gap between the identified PN codes (col. 7, lines 58-68 to col.8, lines 1-4).

(7) with regards to claim 20;

Van Driest discloses comparing samples of the encoded data stream with reference PN codes (Col. 8, lines 1-4);

identifying bits in the second set of data values according to the amount of identified time slip. (col. 8, lines 8-12).

identifying an amount of time slip between the identified bits in the first set of data values (col. 7, lines 57-61);

11. Claims 4,5,11 and12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Van Driest (US 6115411) in view of the Admitted Art, fig. 2 and fig. 3).

(1) with regards to claim 4;

Van Driest further discloses a spread spectrum (SS) encoder (fig.2, 204). Van Driest further discloses all of the subject matter as described above except for specifically teaching that the spread spectrum includes a storage device used for storing

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the one or more spread spectrum codes and a shifter for serially encoding some of the data values with the one or more spread spectrum codes.

However, the admitted art teaches the spread spectrum encoder includes a storage device used for storing the one or more spread spectrum codes and a shifter(pg. 2,lines 7-9).

One of ordinary skill in the art would have clearly recognized that to increase the data transmission rate in SS system and improve performance, a storage device used for storing the one or more spread spectrum codes and a shifter for serially encoding some of the data values with the one or more spread spectrum codes was required.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a storage device and the shifter to the SS system of Van Driest in order to have codes ready as needed by the shift register.

(2) with regards to claim 5;

Van Driest further discloses a spread spectrum encoder (fig.2, 204). Van Driest further discloses all of the subject matter as described above except for (a) specifically teaching the spread spectrum encoder includes a multiplexer having inputs for receiving different chips of the spread spectrum codes and an output.

(b) specifically teaching the spread spectrum encoder includes a code counter coupled to the multiplexer sequentially selecting different chips of the spread spectrum codes for outputting from the multiplexer.

(c) specifically teaching that the spread spectrum encoder includes an exclusive-OR circuit combining the outputs from the multiplexer with the data values .

1) Regarding item (a)

However, the admitted art teaches the spread spectrum encoder includes a multiplexer having inputs for receiving different chips of the spread spectrum codes and an output (col.pg.2, lines 9).

One of ordinary skill in the art would have clearly recognized that to select one of many data-sources and outputs that source into one channel, a multiplexer that sequentially selects different chips would have help to reduce cost.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a multiplexer having inputs for receiving different chips of the spread spectrum codes and output to the SS system of Van Driest in order to ensure accuracy codes.

2) Regarding item (b)

However, the admitted art teaches the spread spectrum encoder includes a code counter coupled to the multiplexer sequentially selecting different chips of the spread spectrum codes for outputting from the multiplexer (pg. 2, lines 9-10).

One of ordinary skill in the art would have clearly recognized a code counter coupled to the multiplexer would control the data in the multiplexer.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a code counter to the SS encoder of Van Driest in order to ensure accuracy of the system.

3) Regarding item (c)

However, the admitted art, teaches the spread spectrum encoder includes an exclusive-OR circuit combining the outputs from the multiplexer with the data values (pg. 2, lines 14-15).

One of ordinary skill in the art would have clearly recognized that an exclusive-OR circuit combining the outputs from the multiplexer with the data values helps to invert each chip, which helps to spread the PN codes.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include an exclusive-OR circuit to the SS encoder of Van Driest in order to ensure accuracy of codes transmitted.

(3) with regards to claim 11;

Van Driest further discloses a spread spectrum encoder (fig. 204). Van Driest further discloses all of the subject matter as described above except for

(a) specifically teaching that the spread spectrum decoder includes a storage device used for storing one or more reference spread spectrum codes.

(b) specifically teaching that a sampling circuit taking samples of the spread spectrum encoded data stream and comparing the samples with the reference spread spectrum codes.

1) Regarding item (a)

However, the admitted art teaches the spread spectrum encoder (fig. 22). The spread spectrum decoder includes a storage device used for storing one or more reference spread spectrum codes (fig. 3, 40, pg2, lines 20-21)

One of ordinary skill in the art would have clearly recognized that a storage

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device used for storing one or more reference spread spectrum codes would have reserved the codes and later generated by shift register later.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a storage device in the decoder to the SS system of Van Driest in order to have codes as needed or required by the shift register.

2) Regarding item (b)

However, the admitted art, teaches the spread spectrum encoder (fig. 22) teaches that a sampling circuit taking samples of the spread spectrum encoded data stream and comparing the samples with the reference spread spectrum codes (pg.2, lines 21-22) (pg.2, lines 25-26).

One of ordinary skill in the art would have clearly recognized that a sampling circuit taking samples of the spread spectrum encoded data stream and comparing the samples with the reference spread spectrum codes would have help to determine if accurate data was received.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a sampling circuit taking samples of the spread spectrum encoded data stream and comparing the samples with the reference spread spectrum to the SS system of Van Driest in order to ensure security.

(4) with regards to claim 12;

Van Driest further discloses a spread spectrum encoder (fig. 204). Van Driest further discloses all of the subject matter as described above except for specifically teaching that the spread spectrum encoder includes a match counter counting a number

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of chips for the reference spread spectrum codes that match and mismatch the samples taken by the sampling circuit and identifying data values according to the number of counted matches and mismatches.

However the admitted art, teaches the spread spectrum encoder (fig. 2) that includes a match counter (pg.3, lines 5-7).

One of ordinary skill in the art would have clearly recognized that a match counter coupled would help control the data.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a match counter to the SS system of Van Driest in order to ensure that adequate data was transmitted.

Conclusion

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Helene Tayong whose telephone number is 571-270-1675. The examiner can normally be reached on Monday-Friday 8:00 am to 5:30 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David C. Payne can be reached on 571-272-3024. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Helene Tayong

6/5/07


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SUPERVISORY PATENT EXAMINER